



Hurricane Preparation and Recovery

October 11, 2011

Jon Nance, Chief Engineer, NCDOT



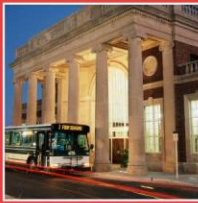
Hurricane Preparation and Recovery

North Carolina & Severe Weather

Our state often bears the brunt of storms, which include:

- Ice storms
- Snow storms
- Heavy rain and flooding
- Hurricanes
- Tornadoes





Hurricane Preparation and Recovery

NCDOT Mission

During disasters, NCDOT is tasked with:

- Maintaining all state-owned highways
- Providing access for emergency personnel
- Allowing egress to the public
- Removing and disposing of vegetative debris along state maintained roadways





Hurricane Preparation and Recovery

Hurricane Irene

- Example of how NCDOT prepares and responds to disasters
- Irene was predicted to hit as a Category 2 or 3 storm
- Made landfall on Aug. 27 near Cape Lookout
- Strong Category 1
- Left 6 people dead
- Caused widespread flooding, damage





Hurricane Preparation and Recovery

Pre-Hurricane Planning

5 Days Before Landfall:

- National Weather Service begins sending detailed hurricane forecasts to NCDOT
- NCDOT holds internal conference call
- Divisions along the coast assess supplies
- Coordination begins with NCEM, FEMA, FHWA
- Staff participate in SERT





Pre-Hurricane Planning

3 Days Before Landfall:

- Evacuations along Outer Banks begin
- Highway Division coordinates with Ferry Division to move residents, visitors to safety
- IMAP crews move from central NC to coast to guide evacuations
- Hold conference calls with NWS to discuss:
 - Current storm track
 - Response plans for “hot spot” areas
 - Support from divisions not in storm’s path





Pre-Hurricane Planning

2 Days Before Landfall:

- Do maintenance checks on equipment
- Order supplies
- Stockpile barricades and other materials
- Fuel up equipment
- Locate debris removal sites
- Work with county emergency management officials on storm response, debris collection
- Prepare debris removal contracts for bid after the storm





Pre-Hurricane Planning

1 Day Before Landfall:

- Station equipment and staff along N.C. 12 for efficient storm response
- Schedule shifts of crews to remove debris from high impact areas
- Ready Ferry Division to activate emergency ferry route from Stumpy Point to Rodanthe
- Continue holding conference calls with NWS to determine where hardest hit areas will be
- Reinforce safety messages to field employees



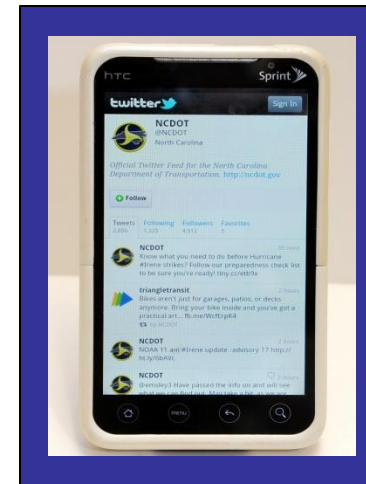


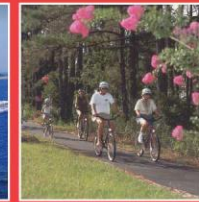
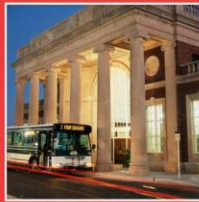
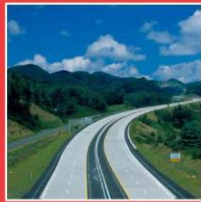
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Pre-Hurricane Planning

Worked with NCDOT Communication Office to inform the public:

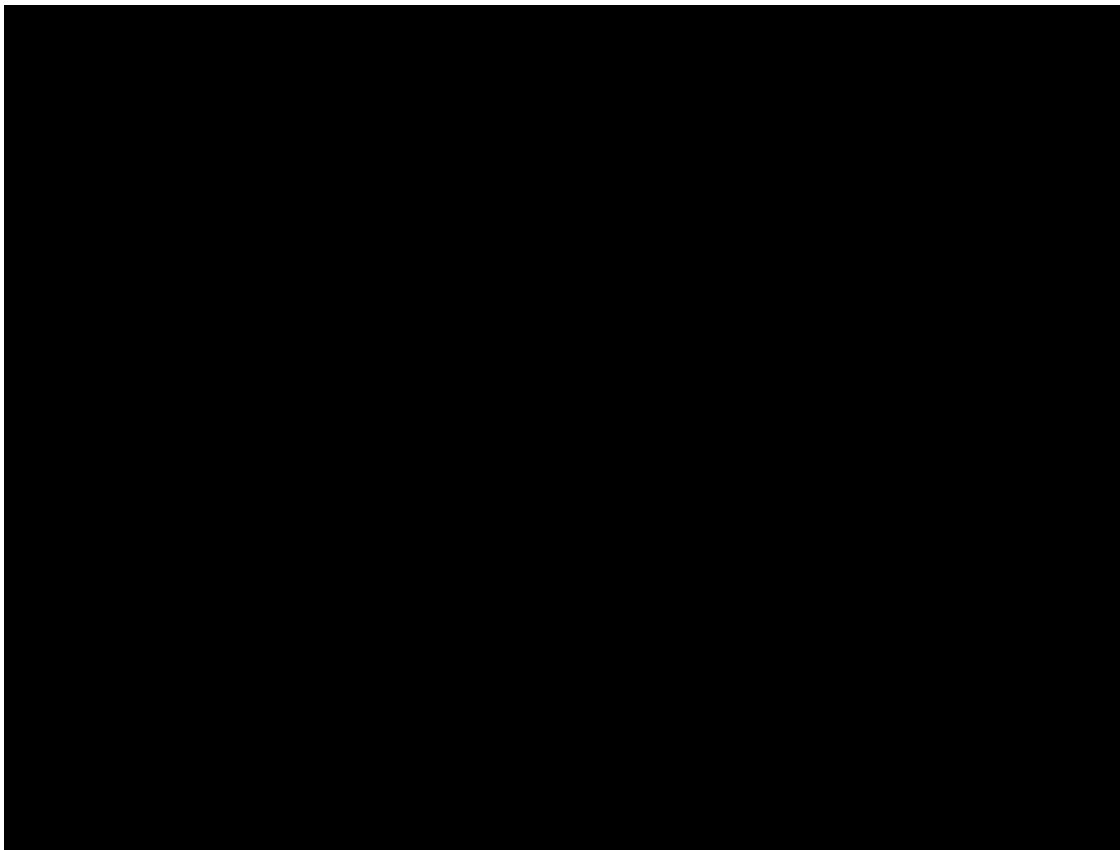
- Sent news releases about preparations
- Participated in media interviews
- Sent tweets to thousands of followers
- Posted photos to Flickr
- Put updates on Secretary's Facebook page
- Offered real-time travel information on website
- Produced video and posted to YouTube





Hurricane Preparation and Recovery

Pre-Hurricane Response





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Hurricane Response

24 Hours After Landfall:

- Surveyed the damage from the storm on the ground
- Photogrammetry took aerial photos of damage
- Shared damage assessments with NCEM, FHWA, FEMA
- Blocked off impassable roads
- Inspected bridges
- Began removing downed trees from roads
- Moved 100+ maintenance workers from unaffected divisions to coast to help with debris removal





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Hurricane Response

48 Hours After Landfall:

- Hydraulics experts flew via helicopter to damaged areas to gather data
- Survey experts collected data
- Assisted county emergency management with recovery options
- Launched contracts to begin debris removal, road repair
- Reopened roads and bridges as flooding subsided and debris removed
- Established debris collection schedules





Hurricane Preparation and Recovery

N.C. 12 Response, Recovery

- Closed road to traffic
- Hosted merger team on Aug. 31 to discuss data collected
- Finalized design criteria for temporary solution
- Completed design on Sept. 1 for temporary bridge
- Obtained all permits for temporary bridge and secured contractors on Sept. 2
- Started work in Rodanthe on Sept. 2
- Began construction on temporary bridge on Sept. 8
- Bridge, N.C. 12 open to traffic on Oct. 10





Hurricane Preparation and Recovery

Bonner Bridge Response

- Prior to Irene's landfall, survey experts took measurements
- Immediately after the storm hit, engineers visually inspected the bridge and found no signs of damage
- Bridge divers conducted underwater inspections and found no storm damage
- Survey experts took additional measurements and found no significant change
- Bridge remained closed until N.C. 12 repairs were completed Oct. 10
- Construction on new bridge to start in late 2012





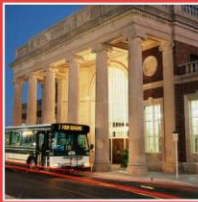
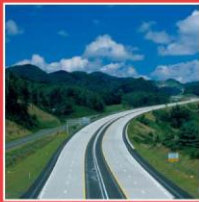
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Hurricane Response

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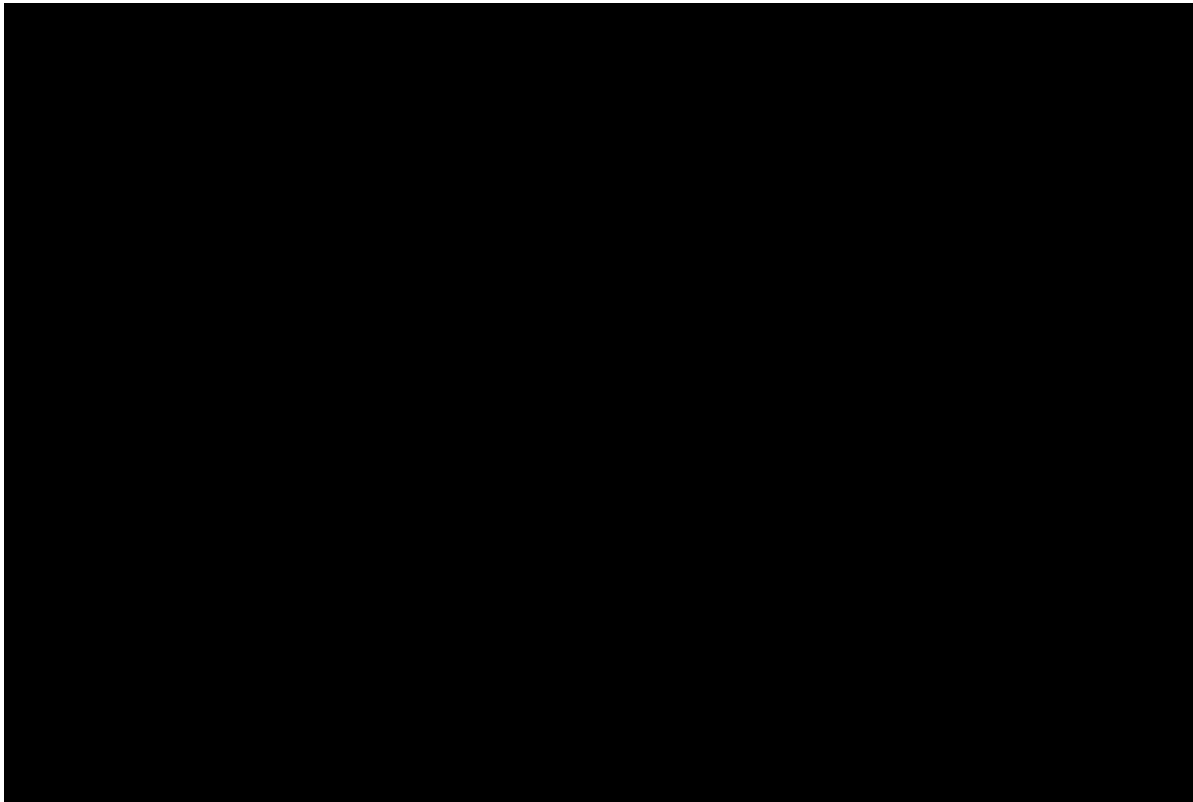
- Sent daily news releases regarding progress on N.C. 12 recovery efforts
- Sent regular news releases about road conditions, debris collection
- Created N.C. 12 website and blog to chart progress
- Posted photos of storm damage to Flickr
- Tweeted travel updates, ferry information, road condition details to thousands of followers
- Answered citizens' storm-related questions on Secretary's Facebook page
- Produced videos on recovery efforts

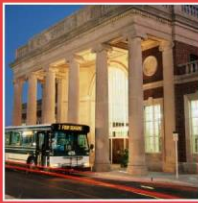
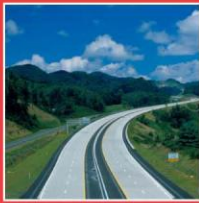




Hurricane Preparation and Recovery

Hurricane Response





Hurricane Preparation and Recovery

Local Government Involvement

Memorandums of Agreement:

- Releases NCDOT authority to local government
- Allows local government to be reimbursed by FEMA
- Allows local government to immediately begin removing debris on secondary routes
- Primary routes are not immediately eligible





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Reimbursements

FEMA:

- Disaster threshold is \$12.5 million statewide
- Each county must be declared individually
- Individual and public assistance are separate declarations
- 4 categories of work:
 - Category A — Debris Removal
 - Category B — Emergency Protective Measures
 - Category C — Roads and Bridges
 - Category E — Buildings and Equipment

FHWA:

- Disaster threshold is \$700,000 statewide
- Once a declaration is made all counties are eligible
- Emergency Protective Measures are not eligible
- FHWA only recognized NCDOT as an applicant





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Questions?

